

REMARKS

Introduction

This application has been reviewed in light of the Office Action mailed on May 1, 2009.

Claims 1-4 and 6-22 remain pending in this application. Claims 1 and 13, the independent claims, have been amended. Claim 5 has been canceled without prejudice or disclaimer of subject matter.

The rejections under 35 U.S.C. § 103

Claims 1-8 and 10-22 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent No. 1,965,866 to Tolman in view of European Document EP 1179682 A2 (hereinafter ‘682) and U.S. Patent No. 6,974,279 to Morohashi; and claim 9, as being obvious from Tolman in view of ‘682 and Morohashi, and further in view of JP 9301504 (hereinafter ‘504).

Applicant submits that independent claims 1 and 13, together with the claims dependent therefrom, are patentably distinct from the cited references for at least the following reasons.

The Examiner contends, at paragraph 5 of the Office Action (page 2) that “injecting a second medium into an ejector (taught by ‘682 reference) would inherently increase of the suction effect of the ejector.”

However, it is mentioned in paragraph [0015] on column 3 of the ‘682 reference:

“A flow rate of cleaning liquid Q3 can be set optimally depending on a configuration of the ejector and/or a flow rate of liquid Q2. It should be noted that if a flow rate of cleaning liquid Q3 is too low, cleaning efficiency will be reduced; whereas if the flow rate is too high, excess cleaning liquid Q3 will form thin wall 9, thereby causing an undesirable decrease in suction capability of the ejector.”

This teaching of the ‘682 reference is not according to what the Examiner mentions and is

against the teaching of the present application.

One important difference between the cited references and the claimed invention is that in the claimed invention the second medium is sprayed by a nozzle.

US 1965866 (Tolman) has been cited in the Office Action. The Tolman patent does not disclose a method and apparatus according to the present application, but a special steam jet air exhauster operating conveyer. In Tolman only one actuating medium is used. In Tolman the second medium is not sprayed by at least one nozzle to the ejector apparatus and the second medium does not intensify the suction effect of the ejector.

In EP 1179682 ('682) it is mentioned that a cleaning liquid is introduced to the ejector. By the arrangement of '682 it is possible to avoid solid material from being deposited to an outer surface of the nozzle portion 2. In '682 the second medium does not intensify the suction effect of the ejector. In 682 the cleaning liquid is not sprayed by a nozzle but drawn from the introducing pipe. Moreover, it would not inherently increase the suction effect as mentioned by the Examiner, but if in fact the high flow rate of the cleaning liquid can cause an undesirable decrease in suction capability of the ejector.

Morohashi does not show that the second medium is liquid or liquid and gas.

Accordingly, it would not have been obvious for a person having ordinary skill in the art to reach the claimed invention on the basis of the Tolman patent in view of '682 and Morohashi.

The solution according to the invention has numerous significant advantages. By supplementing the apparatus with a possibility to feed a second medium to the ejector device, on one hand, possible odor nuisances in the ejector device may be decreased, and at the same time, suction may be intensified. By bringing a second medium along with the actuating

medium and, if required, by using the pressure of the actuating medium for bringing and/or feeding the second medium to the ejector space, an extremely advantageous and efficient solution can be achieved. By arranging the nozzle of the second medium in the same unit with the nozzle of the actuating medium, a manufacturing- technically sensible solution can be achieved. At the same time, a favorable solution can be achieved for intensifying the suction of the ejector device.

When utilizing a material of greater density, such as liquid, advantageously water, the suction effect may be intensified. On the other hand, the suction effect may be further improved by bringing a second medium, even though the actuating medium is a liquid or a mixture of liquid and gas. When utilizing liquid as the actuating medium and/or at least as the second medium, the gas flow may be "washed" by spraying it and thus possible particle and odor nuisances can be eliminated. By utilizing a separate pump to bring the second medium, its bringing may be easily regulated. In addition, the proportion of the actuating medium and the second medium may be regulated at the same time.

By regulating the pressure of the actuating medium going to the ejector when required, considerable energy savings can be achieved. In addition, the suction achieved by the ejector is affected by regulating the pressure, whereby also the underpressure and/or pressure difference of the material-conveying pipe may be conveniently regulated. By utilizing flow paths arranged in parallel for regulating the pressure, which paths have a choke member and a valve which is opened and closed based on the impulses of the control system, an extremely feasible control system can be achieved, which is easily modifiable. The transfer of material may be, if desired, begun with a larger pressure achieved for the ejector, and when the conveying process proceeds, the pressure may be decreased.

In the different feed stations of the system, different material may be handled, for which materials different pressure requirements may be set and thus the settings which affect their conveyance. On the other hand, in connection with different feed stations may be arranged a switch with which the user defines, for example according to the material fed, pressure values used in the conveyance. By arranging the choke members to be adjustable, the diversity of the system may be further improved, whereby it may be arranged for conveying material of different qualities. The system allows, *inter alia*, the possibility of varying the pressure difference/ (under) pressure in the material-conveying pipe, which characteristic may be further extended by arranging a connection according to the invention to be opened and closed for pressurized air in the material-conveying pipe.

According to an embodiment of the invention, by utilizing means for monitoring the flow in the suction pipe between the separator device and the ejector device, the operation of the apparatus may be regulated based on the variations of the flow in question. By further arranging a material outlet means of the separator device to operate based on the commands of the control system, and further advantageously using pressurized air as their actuating medium, the functionality of the system may be further improved.

For at least the foregoing reasons, independent claims 1 and 13, and the claims dependent therefrom, are seen to be clearly allowable over the cited references.

The double patenting rejections

Also in the Office Action, claims 1-10, 12-14, 21, and 22 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4-13, and 19-22 of copending Application No. 10/591,301.

It is noted that the provisional double patenting rejection is not the only rejection remaining in either of these two applications. Accordingly, Applicant will address this issue at the appropriate time.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Respectfully Submitted

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